CONCERNING TREATMENT

Table 9 shows the amount of treatment given in pregnancy which failed to prevent congenital syphilis. Apology is made for the absence of more detailed data on dosage, but this information was not obtainable.

Case 5 had five bismuth injections, each .15 gram, and six mapharsen injections each .04 gram just prior to the child's birth. Case 9 had twelve hip and seven arm injections during the fifteen weeks prior to delivery, type of drug and dosage are not known. Case 12 started antiluetic treatment in the middle of June, 1943, taking one arsenical and bismuth injection weekly until the baby's birth on September 10, 1943, three months later. Case 13 received only three arsenical and bismuth injections before delivery. Case 18 started treatment on September 13, 1940, about seven months before delivery. Other than the fact that "regular treatment" was given, nothing further could be elicited from the private doctor. Case 25 had one month of arsenical therapy, dose unknown, before delivery. Case 27 had ten weekly bismuth treatments, followed by ten weekly arsenicals (each .45 gram) up to the time of delivery. Her treatment was started in the fourth month of gestation. Case 28 had sixteen "arm" injections.

TABLE 10.—*Facts Pertaining to the Father*

a. Father diagnosed and under treatment	12
b. Father examined and not diagnosed syphilis	7
c. Father examined, diagnosed but not treated	1
d. Father in Army, treatment status unknown	2
e. Father's whereabout unknown	4
f. Father not examined, reason unknown	4
TOTAL	30 Cases

The information given in Table 11 was obtained, relative to mother and luetic child, of medical care subsequent to the diagnosis of congenital syphilis.

TABLE 11.—*Treatment Status of Mother and Child Subsequent to Birth of Syphilitic Child*

	Mother	Child
a. Still under active treatment	23	18
b. Under medical supervision	4	5
c. Refused treatment	2	..
d. Not under treatment	..	5
e. Died	..	2
f. Unknown	1	..
TOTAL	30	30

Parents were uncoöperative in four of the five instances where the child was not receiving treatment. In the fifth case the mother stated she was going to take the child to a clinic.

SUMMARY

Thirty cases of congenital syphilis subsequent to the passage of the prenatal blood test law in California are presented.

Congenital syphilis is higher among Negroes and Mexicans than among the white population of Los Angeles.

Fifty per cent of these luetic mothers went to a physician before the fourth month of pregnancy, at a time when prompt and adequate treatment presumably could have resulted in a non-luetic child.

Although the majority of mothers had a blood test at the first visit to the doctor, one-third had no such test during pregnancy.

One case had a negative blood test early in pregnancy (third month) and a primary vulval darkfield positive lesion the eighth month.

Two mothers gave birth to two consecutive congenital luetic children.

Five of the mothers continued to receive adequate anti-luetic therapy following delivery. Subsequently, each one became pregnant, and each was delivered of a non-luetic baby.

Some of the mothers were uncoöperative in receiving adequate therapy during pregnancy.

One-third of the mothers had previously given birth to non-luetic children.

Three of the thirty mothers had been previously diagnosed as syphilitic and had had previous treatment, which, however, was inadequate.

CONCLUSIONS

Although this survey is numerically small, it does stimulate the following thoughts:

1. A blood test should be done at the first visit in pregnancy and once again before delivery.
2. Syphilitic women should receive adequate therapy in each pregnancy.
3. A more active follow-up program for the treatment of the luetic parturient is indicated.
4. California falls heir to congenital luetic births among recent arrivals from states which have no prenatal blood test law.
5. Early and adequate prenatal care and willingness of patients to coöperate in the enforcement of the intent of the law will materially reduce the incidence of prenatal syphilis.

116 Temple Street.

REFERENCES

1. Records of the Los Angeles City Health Department.
2. November, 1944, Monthly Report of the Bureau of Venereal Diseases of the California State Health Department.

ARTERIOSCLEROTIC GANGRENE WITH SPECIAL REFERENCE TO AMPUTATIONS BELOW THE KNEE*

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THE material forming the basis of this study is taken from a series of 107 cases treated at the Los Angeles County Hospital from January 1, 1942, to July 1, 1944. Gangrene of the dry or wet type was the presenting complication in all instances, and the causative factor was an underlying arteriosclerosis obliterans. Diabetes mellitus was an associated factor in 99 instances, while the remainder were purely of the senile gangrene type. Responsibility in the care of these patients was divided between the Medical and the Orthopedic departments, but our discussion here will be limited to the surgical phases of the problem. Major amputations were performed in 60 limbs as shown in Table 1.

TABLE 1.—*107 Cases of Arteriosclerotic Gangrene, With and Without Diabetes Mellitus.*

Type of Management Received:	No. Cases
1. Medical Régimé (Buerger-Allen Exercises, Physiotherapy, Hot Packs, Paravertebral Blocks, Sulfa Therapy, Heat Cradles, etc.)	22
2. Incision and Drainage	8
3. Toe Amputations	7
4. Supracondylar Amputations, Closed Method	23
5. Supracondylar Amputations Open Method	1
6. Below-the-knee Amputations, Closed Method	34
7. Below-the-knee Amputations, Open Method	2
8. Peripheral Nerve Crushing	1
9. Skin Grafts	2
10. Treatment Refused by Patient	7
TOTAL	107

* From the University of Southern California Medical School, Department of Orthopedic Surgery.

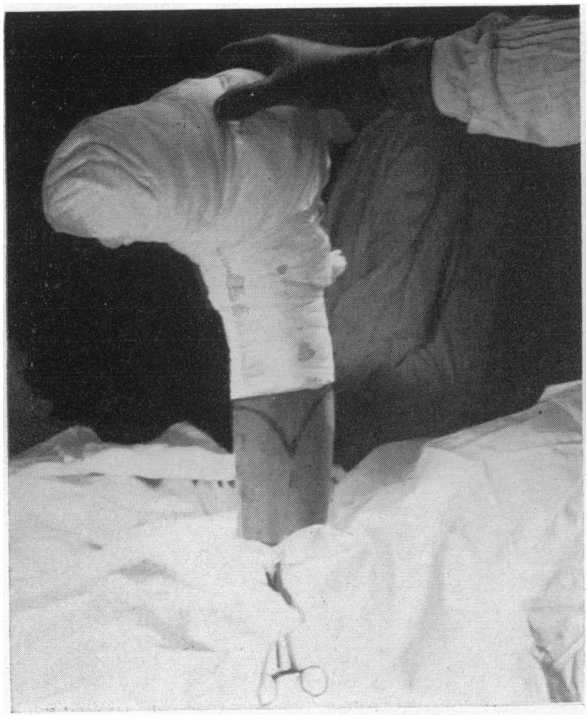

Fig. 1.—The skin flaps are outlined with methylene-blue. Patient on abdomen and knee flexed. No tourniquet is used.

The decision to amputate was not contingent upon any special tests such as the histamin flare or the occelometer, but rather upon clinical grounds alone. A history carefully taken with respect to peripheral vascular symptoms and a detailed examination of the part will suffice to determine both the necessity for, and the level of, a major amputation. We are of the opinion that below-the-knee amputations are to be encouraged, and as our technique improves, we find that greater successes may be expected. At the present time we are doing all our major amputations below the knee, excepting when the following criteria obtain:

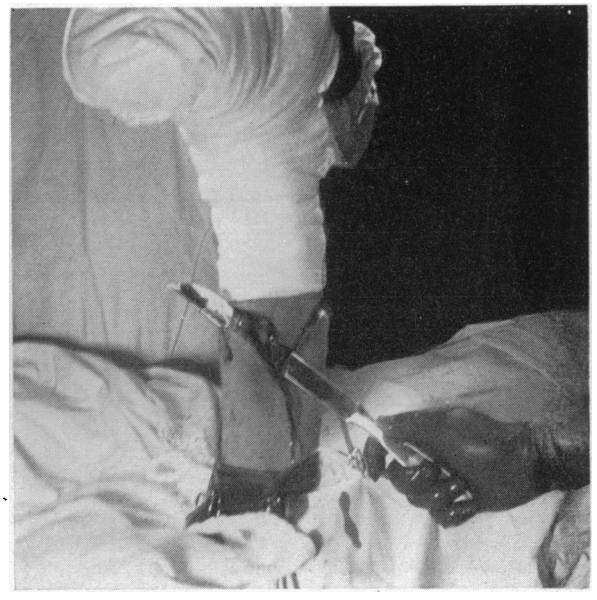

Fig. 2.—The skin and subcutaneous fat are cut to bone in front and to deep fascia behind. The amputation knife touches the front edge of both bones.

1. When there are no pulsations felt in the femoral arteries.
2. When cellulitis is spreading or gangrene is present above the lower one-third of the leg.

TECHNIQUE OF BELOW-THE-KNEE AMPUTATIONS

On coming to surgery the patient is given both a spinal anesthetic and a lumbar paravertebral block. Six cc. of an oily solution of procaine hydrochloride is deposited opposite the second, third, and fourth sympathetic ganglia.

Figure 1 illustrates skin flaps outlined and the leg draped, with the patient on his abdomen. No tourniquet is used. The first cut is made down to the fascia behind, and through the periosteum in front. In order to expose the large vessels, we find it helpful to first cut away the bulk of the overlying muscles. To accomplish this the knife is entered just behind the fibula at the "jaw" of

Fig. 3.—The knife edge is turned and by a sawing motion the muscle mass is cut without damage to the deep vascular structures. By the same procedure the posterior vessels are approached.

Fig. 4.—One plaster roll forms the overshell. Immobilization promotes healing. Gravitational tug on the suture line is prevented.

TABLE 2.—*Results in 34 Below-the-knee Amputations.*

	Number of Cases	Primary Healing	Complicated Healing		
				Failures	
			Hospital Stay Prolonged But No Further Surgery Required	Reamputated Below the Knee	Reamputated Above the Knee
Those receiving paravertebral blocks.....	24	18	2	1	3
		75%	8.3%	4.1%	12%
Those *not* receiving paravertebral blocks.	9	6	2	1	
		66.6%	22.2%	1.2%	0
Those receiving peri-arterial strippings..	1	1	0	0	0
Totals (cases)	34	25	4	2	3

the skin flap, and exit is made 1 cm. posterior to the back of the tibia. The cut is then completed, following along the skin edges to fashion the muscle flap. This routine is then repeated in the anterior group, but here the entrance can be made in front of the fibula and the exit in front of and adjacent to the tibia without endangering the anterior tibial vessels. (Figs. 2 and 3.) The artery can be felt in the uncut portion of the musculature and ligated with appropriate sutures. The muscle remaining between the bones is severed and all the soft tissue is stripped toward the knee far enough to insure a loose flap. A beveled cut on the tibia and a resection of the fibula one inch higher are done in the conventional manner. No fascial sutures are used. Interrupted fine cotton sutures are placed in the skin 1 cm. apart and a fluffy dressing is applied, then covered with sheet wadding. One eight-inch roller bandage of plaster-of-Paris is applied with the knee in slight flexion. (Fig. 4.)

POSTOPERATIVE CARE

Paravertebral blocks are repeated on the third, sixth, and ninth postoperative days, and the sutures are removed, together with the cast, on the tenth. An ACE bandage is then applied to promote shrinking.

In Table 2 the results are summarized and they indicate the value of the paravertebral block routine as an adjunct in postoperative care. Those cases in which no block was given received similar treatment otherwise. Twenty-four cases receiving blocks went on to primary uncomplicated healing in 18 instances, or 75 per cent, while 9 cases not receiving the blocks healed per primum in 6 instances, or 66.6 per cent. One case of primary healing was subjected to a peri-arterial stripping of the femoral artery in the adductor canal at the time of amputation; this case was the first in which any attempt on our part was made to interrupt vasospastic tone.

Of the 34 cases amputated below the knee, there were 5 failures, or 14.7 per cent. Two of these showed no evidence of pulsations in the femoral arteries, and one of these two was so badly involved in the arteriosclerotic process that neither brachial nor radial pulsations were felt. A third failure was due to a spreading cellulitis above the lower one-third of the leg.

DISCUSSION

It has long been known that trauma to an extremity is followed by an immediate and sometimes prolonged vasospasm by a reflex action along sensory pathways. The trauma of amputation itself incites vasospasm by severely stimulating these pathways. While a single block of the sympathetic chain may permanently break the vasospastic reflex, we are of the opinion that it will not in most instances. Upon this supposition, therefore, we have followed the original block with others repeated throughout the healing period.

CONCLUSIONS

1. Below-the-knee amputations in arteriosclerosis obliterans are both feasible and safe if femoral pulsations are present and if cellulitis does not extend above the lower one-third of the leg.

2. Paravertebral blocks at the time of amputation and continued throughout the healing period increase the incidence of primary healing by releasing reflex vasospasm in the skin flaps.

3. Atraumatic technique, avoidance of tourniquets, and immobilization of the stump in a plaster shell are mentioned only to reëmphasize principles previously laid down by others.

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PRIMARY CANCER OF THE LUNG*

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IN recent years the medical literature has contained many articles on cancer of the lung. The clinical, pathological and therapeutic aspects of the disease have been analysed and critically evaluated.[1,2,3] Much light has been thrown on the clinical features of this condition. In spite of this, the disease is taking an annual toll of 15,000 lives and is increasing in frequency.[4,5] The matter certainly deserves serious attention.

It appeared justifiable to appraise the local status of this disease by reviewing a group of patients. It was also hoped that the data elicited might contribute toward earlier diagnosis. Hence this paper records clinical and pathological data on 50 consecutive cases of bronchogenic carcinoma from the San Francisco City and County Hospital. In all of the cases the diagnosis was either confirmed or established at autopsy.

CLINICAL DATA

Age, Sex and Occupation: The ages of the patients ranged from 28 to 81, the average age being 55 years. The majority of the patients fell into the 5th, 6th and 7th decades of life. Forty-five were males and 5 were females. There was an exposure to dust or other irritating substances in 16 individuals of the group. The wide variety of occupations of the afflicted personnel is illustrated in Table 1.

Preëntry Medical Advice: In 28 of the cases a physician had been consulted before the patient entered the

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